# MINNESOTA CONSERVATION IMPROVEMENT PROGRAM ENERGY AND CARBON DIOXIDE SAVINGS REPORT FOR 2009-2010

Prepared by Minnesota Department of Commerce, Division of Energy Resources

Pursuant to Minnesota Statutes §216B.241, subd. 1c(g)



June 28, 2012

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#### I. INTRODUCTION

The Minnesota Department of Commerce, Division of Energy Resources (DER) submits this report in fulfillment of Minn. Statutes §216B.241, subd. 1c(g), which requires the Commissioner of Commerce to produce and make publicly available a report on the annual energy savings and estimated carbon dioxide reductions achieved by energy conservation improvement programs for the two most recent years for which data are available. This report updates the previously reported figures for 2009 and provides new figures for 2010.

The Minnesota Energy Conservation Improvement Program (CIP) is a utility-administered program with regulatory oversight by DER. State law requires Minnesota natural gas and electric utilities to invest a portion of their revenues in conservation improvement programs that promote energy efficient technologies and practices to their customers. The DER reviews and approves utility CIP filings to ensure that energy savings are calculated accurately, statutory requirements are met, and programs are cost-effective (i.e., the benefits of avoided of energy consumption and infrastructure costs outweigh the costs of delivering the programs).

Energy conservation improvements defer costly investments in generation, transmission and distribution infrastructure and are a critical part of Minnesota's efforts to reduce greenhouse gases. In 2009 and 2010, Minnesota's utilities invested over \$391 million in CIPs, achieving 1.6 million megawatt-hours (MWh) of annual electricity savings and 4.5 million dekatherms (Dth) of natural gas savings, for a total of approximately 1.7 million tons of avoided carbon dioxide emissions. This was enough electrical energy saved to power approximately 140,000 homes for one year<sup>1</sup> and enough natural gas energy saved to heat approximately 83,000 homes for one year<sup>2</sup>. The carbon dioxide savings were equivalent to removing approximately 300,000 cars from the road for one year.<sup>3</sup>

#### II. METHODOLOGY

#### A. DATA COLLECTION

The data for this report were compiled from annual status reports filed by Minnesota electric and natural gas utilities. DER reviews these reports to assess program performance and ensure that savings are calculated using approved savings formulas. This process has been streamlined through the use of the Energy Savings Platform, an IT platform for energy efficiency data

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<sup>&</sup>lt;sup>1</sup> Based on an annual average electricity consumption of 11,493 kWh per household in the West North Central region of the Midwest, as determined in the U.S. Energy Information Administration's 2005 Residential Energy Consumption Survey (RECS), Table US8.

http://www.eia.gov/consumption/residential/data/2005/c&e/summary/pdf/tableus8.pdf, accessed May 16, 2012.

Based on an annual average natural gas consumption of 54 thousand cubic feet (Mcf) per household for space heating in the West North Central region of the Midwest, as determined in the U.S. Energy Information Administration's 2005 Residential Energy Consumption Survey (RECS), Table SH7.

http://www.eia.gov/consumption/residential/data/2005/c&e/spaceheating/pdf/tablesh7.pdf, accessed May 16, 2012.

<sup>&</sup>lt;sup>3</sup> U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator (http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results), accessed May 16, 2012.

management and reporting developed through a grant by DER to Energy Platforms, LLC, a Minnesota-based software company. Minnesota's 173 electric cooperatives and municipal utilities have been reporting their CIP data on the Platform since 2010, and DER plans to transition the investor-owned utilities to the Platform in 2013.

#### B. BASIS OF ENERGY SAVINGS

The total energy savings reported by each utility are based on a combination of pre-approved savings formulas from DER's Deemed Savings Database, utility-specific savings formulas approved by DER, and engineering analyses for custom commercial/industrial projects. The pre-approved savings formulas are established for each utility as part of the CIP plan review process. There is no pre-approval process for custom projects; rather, DER staff audit a portion of custom projects completed each year by each utility to ensure that sound engineering methods are used. In addition, utilities are required to implement a measurement and verification (M&V) plan that may include sub-metering, modeling, and/or bill analysis to verify the calculated savings for large custom projects. These processes together ensure that the final savings credited to utilities are accurate and reliable.

Note that all savings reported herein are first-year savings produced by new measure installations. Thus, the savings reported for a given year represent only the *incremental* savings realized through new improvements installed that year and do not include savings from improvements installed in prior years.

#### C. CARBON DIOXIDE SAVINGS CALCULATIONS

The annual carbon dioxide ( $CO_2$ ) savings reported herein represent avoided emissions as a result of energy conservation improvements. Similar to the annual energy savings reported, the annual  $CO_2$  savings are *incremental* rather than *cumulative*.

Electric CIP CO<sub>2</sub> savings were estimated by multiplying annual energy savings by a regional average electricity generation emissions factor reported by the Minnesota Pollution Control Agency, equal to 1,823 pounds of CO<sub>2</sub> per MWh of electricity generated.<sup>4</sup> This figure is significantly higher than the US average CO<sub>2</sub> emissions factor of 1,329 pounds of CO<sub>2</sub> per MWh due to the higher concentration of coal-fired power plants in the Upper Midwest. Natural gas CIP CO<sub>2</sub> savings are estimated using the standard emissions factor of 121 pounds of CO<sub>2</sub> per Dth of natural gas.

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<sup>&</sup>lt;sup>4</sup> The Minnesota Pollution Control Agency provides the Minnesota Public Utilities Commission and Minnesota Department of Commerce with updated regional average emission rates in Docket No. E,G999/CI-00-1343. The CO<sub>2</sub> emission rate was last updated on March 17, 2009.

### III. RESULTS

Table 1: Total Electric CIP Savings and Expenditures by Year, 2006-2010<sup>5</sup> (Incremental First-Year Savings)

	MWh		CO2 Savings
	Savings	Expenditures	(tons)
2006	411,999	\$82,245,240	375,537
2007	468,070	\$91,239,426	426,646
2008	597,288	\$102,010,572	544,428
2009	669,122	\$144,917,876	609,905
2010	899,553	\$186,282,527	819,943

Table 2: Total Natural Gas CIP Savings and Expenditures by Year, 2006-2010 (Incremental First-Year Savings)

	Dth Savings	Spending	CO2 Savings (tons)
2006	2,095,047	\$16,266,993	126,750
2007	1,917,144	\$16,406,430	115,987
2008	1,563,496	\$18,125,110	94,592
2009	1,843,347	\$22,771,640	111,522
2010	2,612,212	\$37,963,093	158,039

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<sup>&</sup>lt;sup>5</sup> The 2009 electric results have been revised from previously reported figures to reflect changes requested by utilities and avoided transmission and distribution (T&D) losses. A T&D loss factor of 8% was used when a utility-specific loss factor was not available.

Table 3: CIP Electric Savings and Expenditures by Organization, 2009 (Incremental First-Year Savings)

kWh

		K vv n Savings as			
		% of			Expenditures
		Adjusted			as % of
	kWh	Average	CO2		Adjusted
Ouganization	Savings @	Retail Sales <sup>6</sup>	Savings	E 1:4	Annual GOR <sup>7</sup>
Organization Livelity and McConstant	Generator	Sales	(tons)	Expenditures	GUK
Investor-Owned Utilities	0.640.640	1.00/	7.002	¢2 212 000	2.40/
Alliant Energy	8,648,648	1.0%	7,883	\$2,213,009	3.4%
Minnesota Power	52,897,731	1.6%	48,216	\$5,483,230	2.4%
Otter Tail Power	35,697,549	1.7%	32,538	\$4,071,907	3.0%
Xcel Energy	342,205,073	1.1%	311,920	\$57,885,077	2.7%
Totals - Investor-Owned Utilities	439,449,001	1.2%	400,558	\$69,653,223	2.7%
Cooperative CIP Aggregators					
Dairyland Power Coop	5,616,949	0.8%	4,628	\$3,469,462	5.4%
East River Electric Power Coop	6,035,852	3.0%	5,051	\$323,683	0.9%
Great River Energy	118,905,105	1.1%	95,918	\$54,033,534	5.6%
Minnkota Power Coop/NMPA	8,396,522	0.5%	6,888	\$2,687,501	2.2%
<b>Totals - Coop CIP Aggregators</b>	138,954,428	1.0%	112,485	\$60,514,179	5.1%
Municipal CIP Aggregators					
CMMPA	3,512,891	0.9%	2,944	\$980,357	2.5%
MMPA - 8 of 11 members	3,020,104	0.5%	2,546	\$911,609	1.5%
MRES	18,061,190	0.9%	15,063	\$3,000,895	2.5%
The Triad (SMMPA members)	27,829,506	1.4%	23,872	\$3,565,242	2.1%
SMMPA - 15 of 18 members	13,946,432	1.5%	11,606	\$2,393,812	3.2%
<b>Totals - Municipal CIP Aggregators</b>	66,370,122	1.1%	56,032	\$10,851,915	2.3%
Other Cooperatives					
Minnesota Valley Coop L&P	3,565,133	2.0%	2,990	\$337,432	3.0%
Sioux Valley Southwestern	1,175,904	3.5%	986	\$96,276	1.4%
<b>Totals - Other Cooperatives</b>	4,741,037	2.3%	3,976	\$433,708	2.4%

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<sup>&</sup>lt;sup>6</sup> Savings as a percent of average retail sales in 2009 is provided for illustrative purposes only as the 1.5% energy conservation goal for Minnesota utilities under Minn. Stat. § 216B.241, subd. 1c did not take effect until 2010. The following baseline periods were used to calculate average sales, corresponding to the approved savings goals for utilities in 2010: Alliant Energy and Xcel Energy, 2006-2008; all other electric utilities, 2005-2007. Adjusted average retail sales exclude sales to CIP-exempt customers.

<sup>&</sup>lt;sup>7</sup> The following base years were used to determine annual gross operating revenues (GOR), corresponding to the approved minimum spending requirements for utilities in 2009: Alliant Energy, 2004; Xcel Energy, 2005; all other electric utilities, 2007. Adjusted annual GOR excludes revenues from CIP-exempt customers.

## **Table 3 (Continued)**

kWh Savings as % of **Expenditures** kWh Adjusted CO<sub>2</sub> as % of **Adjusted** Savings @ Average **Savings Annual GOR Organization** Generator **Retail Sales** (tons) **Expenditures Other Municipals** 0 Ada 3 \$19,676 unknown unknown 47 1.4% 0 2.3% Alvarado \$6,352 Anoka (MMPA member) 754,474 0.3% 688 \$342,585 1.5% 1.7% Biwabik 85,657 4.4% 78 \$6,596 Brainerd 3,535,768 1.4% 3,223 \$235,724 1.4% Brewster 5,300 0.1% 5 \$4,375 1.4% Buhl 2 0.0% 0 \$6,600 1.5% Caledonia 1 0.0% 0 \$1,265 70.3% East Grand Forks (MMPA member) 942,551 0.7% 859 \$387,671 3.5% 221,011 1.9% 201 \$24,159 0.8% 1,240 2.2% **Grand Rapids** 1,360,372 2.5% \$201,863 Hibbing 290,582 0.7% 265 \$118,520 1.1% Hutchinson 4,260,967 1.4% 3,884 \$464,382 1.7% 220 Kandiyohi 0.0% 0 \$1,329 0.4% Lake Crystal 216,157 1.3% 197 \$36,515 1.9% 19 Madelia 20,444 0.1% \$24,922 1.0% Mountain Iron 269,412 1.5% 246 \$64,566 3.8% New Ulm 1,277 1,401,235 0.7% \$266,547 1.3% Nielsville 2,857 1.5% 3 \$897 1.7% **Proctor** 105,056 1.3% 96 \$30,048 1.7% Shakopee (MMPA member) 4,906,570 1.3% 4,472 \$467,152 1.3% Spring Grove 1.2% 6,030 0.0% 5 \$14,688 St. Charles 17 19,192 0.1% \$58,389 2.1% Truman 200 unknown 0 \$200 unknown Two Harbors 315,446 1.1% 288 \$27,760 1.3% Virginia 0.0% 21 2.9% 23,538 \$273,235 Warroad 2,562 0.0% 2 \$28,993 1.0% Willmar 861,727 0.3% 785 \$349,842 1.7% **Totals - Other Municipals** 19,607,381 0.7% 17,872 1.6% \$3,464,852 **TOTALS - COOPS &** MUNICIPALS 229,672,969 1.0% 209,347 4.0% \$75,264,653

669,121,970

1.1%

609,905

\$144,917,876

**TOTALS - ELECTRIC UTILITIES** 

3.3%

Table 4: CIP Natural Gas Savings and Expenditures by Organization, 2009 (Incremental First-Year Savings)

Organization	Dth Savings	Dth Savings as % of Adjusted Average Retail Sales <sup>8</sup>	CO2 Savings (tons)	Expenditures	Expenditures as % of Adjusted Annual GOR <sup>9</sup>
Investor-Owned Utilities	2 411 241 411 82	24145	(00225)		332
Alliant Energy	25,871	1.4%	1,565	\$695,978	4.1%
CenterPoint Energy	938,799	0.6%	56,797	\$10,117,898	0.7%
Great Plains Natural Gas	7,975	0.1%	482	\$186,584	0.5%
Greater Minnesota Gas	1,305	0.3%	79	\$9,150	0.3%
Minnesota Energy Resources-NMU	20,727	0.2%	1,254	\$632,670	0.9%
Minnesota Energy Resources-PNG	112,842	0.3%	6,827	\$2,490,089	1.0%
Xcel Energy	670,120	0.9%	40,542	\$7,682,998	1.0%
<b>Totals - Investor-Owned Utilities</b>	1,777,639	0.6%	107,547	\$21,815,367	0.8%
Municipal Aggregators					
Owatonna/Austin Public Utilities	39,927	0.9%	2,416	\$420,041	0.8%
Other Municipals					
Duluth	7,092	0.1%	429	\$455,552	0.8%
Hutchinson	18,689	1.2%	1,131	\$80,680	0.5%
<b>Totals - Other Municipals</b>	25,781	0.4%	1,560	\$536,232	0.7%
TOTALS - MUNICIPALS	65,708	0.6%	3,975	\$956,273	0.8%
TOTALS - GAS UTILITIES	1,843,347	0.6%	111,522	\$22,771,640	0.8%

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<sup>&</sup>lt;sup>8</sup> Savings as a percent of average retail sales in 2009 is provided for illustrative purposes only as the 1.5% energy conservation goal for Minnesota utilities under Minn. Stat. § 216B.241, subd. 1c did not take effect until 2010. The baseline period 2006-2008 was used to calculate average retail sales, corresponding to the approved savings goals for gas utilities in 2010. Adjusted average retail sales exclude sales to CIP-exempt customers.

<sup>&</sup>lt;sup>9</sup> The following base years were used to determine annual gross operating revenues (GOR), corresponding to the approved minimum spending requirements for utilities in 2009:Alliant Energy, 2004; CenterPoint Energy, Great Plains Natural Gas, Greater Minnesota Gas, Minnesota Energy Resources-NMU, Minnesota Energy Resources-PNG, and Xcel Energy, 2005; all gas municipal utilities, 2008. Adjusted annual GOR excludes revenues from CIP-exempt customers.

Table 5: CIP Electric Savings and Expenditures by Organization, 2010 (Incremental First-Year Savings)

Organization	kWh Savings @ Generator	kWh Savings as % of Adjusted Average Retail Sales <sup>10</sup>	CO2 Savings (tons)	Expenditures	Expenditures as % of Adjusted Annual GOR <sup>11</sup>
<b>Investor-Owned Utilities</b>					
Alliant Energy	3,461,129	0.4%	3,155	\$1,267,734	1.7%
Minnesota Power	60,503,220	1.8%	55,149	\$5,635,000	2.4%
Otter Tail Power	31,888,429	1.5%	29,066	\$4,984,048	3.7%
Xcel Energy	415,591,395	1.3%	378,812	\$71,884,336	2.8%
<b>Totals - Investor-Owned Utilities</b>	511,444,173	1.4%	466,181	\$83,771,118	2.8%
Cooperative CIP Aggregators					
Dairyland Power Coop	2,788,610	0.4%	2,542	\$2,184,985	3.4%
East River Electric Power Coop	9,852,137	4.9%	8,980	\$331,683	0.9%
Great River Energy (All-Rqmts Members)	183,926,700	2.1%	167,649	\$58,897,743	8.0%
Great River Energy (Fixed Members)	35,589,681	1.3%	32,440	\$16,850,725	7.5%
Minnkota Power Coop/NMPA	28,747,078	1.7%	26,203	\$2,836,092	2.4%
Totals - Coop CIP Aggregators	260,904,206	1.9%	237,814	\$81,101,228	6.9%
Municipal CIP Aggregators					
CMMPA	8,127,888	2.0%	7,409	\$1,258,885	3.2%
MMPA - 8 of 11 members	8,390,622	1.3%	7,648	\$891,140	1.5%
MRES	27,606,949	1.4%	25,164	\$3,700,823	3.0%
The Triad (SMMPA members)	37,624,670	1.9%	34,295	\$4,891,022	2.9%
SMMPA - 15 of 18 members	15,656,044	1.6%	14,270	\$5,408,924	7.2%
Totals - Municipal CIP Aggregators	97,406,172	1.6%	88,786	\$16,150,794	3.5%
Other Cooperatives					
Minnesota Valley Coop Light & Power	3,250,524	1.9%	2,963	\$334,107	3.0%
Sioux Valley Southwestern Electric	2,039,646	6.1%	1,859	\$1,340,800	18.8%
<b>Totals - Other Cooperatives</b>	5,290,170	2.5%	4,822	\$1,674,907	9.1%

<sup>&</sup>lt;sup>10</sup> The following baseline periods were used to calculate average retail sales, corresponding to the approved savings goals for utilities in 2010: Alliant Energy and Xcel Energy, 2006-2008; all other electric utilities, 2005-2007. Adjusted average retail sales exclude sales to CIP-exempt customers.

<sup>&</sup>lt;sup>11</sup> The following baseline years were used to determine annual gross operating revenues (GOR), corresponding to the approved minimum spending requirements for utilities in 2010: Alliant Energy and Xcel Energy, 2008; all other electric utilities, 2007. Adjusted annual GOR excludes sales to CIP-exempt customers.

**Table 5 (Continued)** 

kWh Savings as % of **Adjusted Expenditures** kWh CO<sub>2</sub> as % of Average **Adjusted** Savings @ Retail **Savings Organization** Generator **Sales** (tons) **Expenditures Annual GOR Other Municipals** 276 0 unknown \$24,550 Ada unknown Alvarado 53 1.6% 0 \$4,592 1.7% Anoka (MMPA member) 2,427,732 0.9% 2,213 \$357,477 1.6% Biwabik 202,073 10.3% 184 \$14,487 3.7% Brainerd 3,970,064 3,619 \$223,633 1.3% 1.6% Brewster 6,413 0.2% 6 \$6,226 2.0% 0 Buhl 111 1.6% \$8,300 1.9% 0.0% 0 \$4,294 238.6% Caledonia 1 East Grand Forks (MMPA member) 2,002,202 1.4% 1,825 3.4% \$376,945 Ely 1,216,435 10.4% 1,109 \$95,022 3.3% **Grand Rapids** 1,613,707 1,471 \$212,374 2.3% 3.0% Hibbing 750,302 1.7% 684 \$59,944 0.6% Hutchinson 5,345,200 1.7% 4,872 \$451,154 1.6% 239 0.0% 0 \$1,096 0.3% Kandiyohi Lake Crystal 36,579 0.2% 33 \$19,602 1.0% 19 Madelia 21,078 0.1% \$27,664 1.1% Mountain Iron 175,793 1.0% 160 \$33,997 2.0% New Ulm 2,248,397 1.1% 2,049 \$407,380 2.0% Nielsville 0 0.0% 0 \$0 0.0% **Proctor** 120,863 1.5% 110 \$30,690 1.8% Shakopee (MMPA member) 2,526,667 0.7% 2,303 \$531,126 1.4% Spring Grove 6,755 0.0% 6 \$13,953 1.1% St. Charles 126,807 0.4% 116 \$53,003 1.9% Truman 326 unknown 0 \$43,359 unknown Two Harbors 230,316 0.8% 210 \$27,830 1.3% Virginia 0 0.0% 0 \$151,842 1.6% Warroad 0 0.0% 0 \$0 0.0% 1,480,184 1,349 \$403,940 2.0% Willmar 0.5% **Totals - Other Municipals** 24,508,574 22,340 \$3,584,481 1.7% 1.1% **TOTALS - COOPS &** 

388,109,121

899,553,294

1.7%

1.5%

353,761

819,943

\$102,511,409

\$186,282,527

**MUNICIPALS** 

**TOTALS - ELECTRIC UTILITIES** 

5.5%

3.8%

Table 6: CIP Natural Gas Savings and Expenditures by Organization, 2010 (Incremental First-Year Savings)

Organization	Dth Savings	Dth Savings as % of Adjusted Average Retail Sales <sup>12</sup>	CO2 Savings (tons)	Expenditures	Expenditures as % of Adjusted Annual GOR <sup>13</sup>
Investor-Owned Utilities		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	(11111)		
Alliant Energy	21,899	1.2%	1,325	\$734,448	3.7%
CenterPoint Energy	1,300,228	0.9%	78,664	\$16,574,773	1.1%
Great Plains Natural Gas	17,426	0.3%	1,054	\$427,847	0.9%
Greater Minnesota Gas	1,711	0.4%	104	\$20,323	0.4%
Minnesota Energy Resources-NMU	96,962	0.7%	5,866	\$1,344,740	1.7%
Minnesota Energy Resources-PNG	352,474	0.8%	21,325	\$6,204,519	2.3%
Xcel Energy	697,322	1.0%	42,188	\$11,374,005	1.5%
Totals - Investor-Owned Utilities	2,488,022	0.9%	150,525	\$36,680,655	1.4%
Municipal Aggregators					
The Triad	86,774	1.9%	5,250	\$788,155	1.6%
Other Municipals					
Duluth	13,655	0.3%	826	\$412,181	0.7%
Hutchinson	23,761	1.5%	1,438	\$82,102	0.5%
<b>Totals - Other Municipals</b>	37,416	0.6%	2,264	\$494,283	0.7%
TOTALS - MUNICIPALS	124,190	1.2%	7,513	\$1,282,438	1.0%
TOTALS - GAS UTILITIES	2,612,212	0.9%	158,039	\$37,963,093	1.3%

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<sup>&</sup>lt;sup>12</sup> The baseline period 2006-2008 was used to calculate average retail sales, corresponding to the approved savings goals for gas utilities in 2010. Adjusted average retail sales exclude sales to CIP-exempt customers.

goals for gas utilities in 2010. Adjusted average retail sales exclude sales to CIP-exempt customers.

The base year 2008 was used to determine annual gross operating revenues (GOR), corresponding to the approved minimum spending requirements for gas utilities in 2010. Adjusted annual GOR exclude revenues from CIP-exempt customers.

## APPENDIX A. Electric Municipal Power Agency Membership

## Central Minnesota Municipal Power Agency (CMMPA)

**12 members:** Blue Earth, Delano, Fairfax, Glencoe, Granite Falls, Janesville, Kasson, Kenyon, Mountain Lake, Sleepy Eye, Springfield, and Windom.

#### Minnesota Municipal Power Agency (MMPA)

**11 members:** Anoka, Arlington, Brownton, Buffalo, Chaska, East Grand Forks, LeSeur, N. St. Paul, Olivia, Shakopee and Winthrop.

Anoka, East Grand Forks, and Shakopee operate as independent entities under CIP.

## Missouri River Energy Services (MRES)

**24 Minnesota members:** Adrian, Alexandria, Barnesville, Benson, Breckenridge, Detroit Lakes, Elbow Lake, Henning, Hutchinson, Jackson, Luverne, Lake Park, Lakefield, Madison, Marshall, Melrose, Moorhead, Ortonville, St. James, Sauk Centre, Staples, Wadena, Westbrook, and Worthington.

## Northern Municipal Power Agency (NMPA)

**10 Minnesota members:** Bagley, Baudette, Fosston, Halstad, Hawley, Roseau, Stephen, Thief River Falls, Warroad, and Warren.

NMPA aggregates its CIP programs with Minnkota Power Cooperative.

## Southern Minnesota Municipal Power Agency (SMMPA)

**18 members:** Austin, Blooming Prairie, Fairmont, Grand Marais, Lake City, Litchfield, Mora, New Prague, North Branch, Owatonna, Preston, Princeton, Redwood Falls, Rochester, Spring Valley, St. Peter, Waseca, and Wells.

Austin, Owatonna, and Rochester operate as a distinct entity (the Triad) under CIP.

- On the electric side, the Triad includes all three cities.
- On the gas side, the Triad includes Austin and Owatonna only.

## **APPENDIX B. Generation and Transmission Cooperative Membership**

## **Dairyland Power Cooperative**

**3 Minnesota members:** Freeborn-Mower Cooperative Services, Peoples Cooperative Service, and Tri-County Electric Cooperative.

## East River Electric Power Cooperative

**3 Minnesota members:** Lyon-Lincoln Electric Cooperative, Renville-Sibley Cooperative Power Association, and Traverse Electric Cooperative.

## <u>Great River Energy – All-Requirements Member Cooperatives</u>

**20 members:** Arrowhead Electric Cooperative, BENCO Electric Cooperative, Brown County Electric Association, Connexus Energy, Cooperative Light & Power, Dakota Electric Association, East Central Energy, Goodhue County Cooperative Electric Association, Itasca-Mantrap Cooperative Electric Association, Kandiyohi Power Cooperative, Lake Country Power, Lake Region Electric Cooperative, McLeod Cooperative Power Association, Mille Lacs Energy Cooperative, Nobles Cooperative Electric, North Itasca Electric Cooperative, Runestone Electric Association, Stearns Electrical Association, Steele-Waseca Cooperative Electric, and Todd-Wadena Electric Cooperative.

Elk River Municipal Utilities is also aggregated with Great River Energy – All-Requirements Members CIP totals.

## <u>Great River Energy – Fixed Member Cooperatives</u>

**8 members:** Agralite Electric Cooperative, Crow Wing Power & Light, Federated Rural Electric Association, Meeker Cooperative Light & Power Association, Minnesota Valley Electric Cooperative, Redwood Electric Cooperative, South Central Electric Association, and Wright-Hennepin Cooperative Electric Association.

#### Minnkota Power Cooperative

**8 Minnesota members:** Beltrami Electric Cooperative, Clearwater-Polk Electric Cooperative, North Star Electric Cooperative, PKM Electric Cooperative, Red River Valley Cooperative Power Association, Red Lake Electric Cooperative, Roseau Electric Cooperative, and Wild Rice Electric Cooperative.